American Medicine

FOUNDED, OWNED, AND CONTROLED BY THE MEDICAL PROFESSION OF AMERICA

PUBLISHED WEEKLY.

ADVERTISEMENTS LIMITED TO 44 PAGES. OFFICES, 1321 WALNUT STREET, PHILADELPHIA.

VOL. V, No. 1. JANUARY 3, 1903. $5.00 YEARLY.

CONTENTS

EDITORIAL COMMENT.....1, 37, 38

EDITORIAL ECHOES..... 4

BOOK REVIEWS..... 4

AMERICAN NEWS AND NOTES..... 6

FOREIGN NEWS AND NOTES..... 7

OBITUARIES..... 8

CLINICAL NOTES AND CORRESPONDENCE.

Physicians' Total Abstinence Manifesto. By T. D. CROTHERS, M.D., of Hartford, Conn... 9

Thoracentesis Followed by Albuminous Expectoration. By WM. CLIFTON DREIN, M.D., of Philadelphia..... 9

Some of the Surgical Uses of Clove Oil. By W. A. BRIGGS, M.D., of Sacramento, Cal..... 9

Broad Ligament Cyst of Large Size Occurring During the Course of Pregnancy; Its Removal Five Weeks After Delivery. By LEVI JAY HAMMOND, M.D., of Philadelphia..10

ORIGINAL ARTICLES.

Some Cardiorespiratory Phenomena Revealed by the Röntgen Rays. By ALBERT ABRAMS, A.M., M.D., of San Francisco, Cal. (*Illustrated*).....11

A Case of Subacute Combined Sclerosis of the Spinal Cord. By CHARLES S. POTTS, M.D., of Philadelphia.....15

The Etiology of Uterine and Pelvic Disease. By CLARENCE L. WHEATON, M.D., of Denver, Colo.....16

Transverse Position of the Child With Prolapse of the Arm and Impaction. By STRICKER COLES, M.D., of Philadelphia.....18

Two Examples of Parasitic Hematuria. By L. NAPOLEON BOSTON, A.M., M.D., of Philadelphia. (*Illustrated*).....20

Exophthalmic Goiter: Report of Case. By K. S. HOWLETT, M.D., of Franklin, Tenn.....21

SPECIAL ARTICLES.

The Gynecologic Examination. By JAMES HAWLEY BURTENSHAW, M.D., of New York.....23

THE WORLD'S LATEST LITERATURE....26

THE PUBLIC SERVICE.....40

TABLE OF CONTENTS CONTINUED ON PAGE 8.

Entered at the Philadelphia Post-Office as Second-Class Matter. Copyrighted by The American-Medicine Publishing Company.

THE PHYSICIAN'S VISITING LIST FOR 1903-1904

(Lindsay and Blakiston's)

is now ready for distribution. This is the fifty-second successive—and successful—year of its publication.

This Visiting List is a small, neat, compactly-made, strongly-bound pocket-book, with leather cover, gilt edges, tuck, pocket, and rubber-tipped pencil, made up to hold 25 to 100 patients' records per day, week or month, dated and undated, with pages for special memoranda and tables for ready reference. **It is the smallest and lightest Visiting List Published.** It is a book of original entry; a simple plain statement of a year's work that may be kept with a minimum of labor. It is the ideal book for the physician. No better evidence of the practical worth of this book can be offered than the uniform popularity it has enjoyed.

REGULAR EDITION, DATED

For 25 Patients Weekly, leather covers, pocket and pencil, $1 00
" 50 " " " " " " " " 1.25
50 " " 2 Vols. {Jan. to June / July to Dec.} 2.00
75 " " 2 Vols. {Jan. to June / July to Dec.} 2.00
100 " " 2 Vols. {Jan. to June / July to Dec.} 2.25

Perpetual Edition, same as above, without dates, 1300 names 1.25
2600 names..... 1.50
Monthly Edition (without dates), without flap or pencil... .75
With flap and pencil..... 1.00

THESE PRICES ARE NET

May be ordered through any Bookseller, Wholesale Druggist or News Agent; or upon receipt of price we will send it, postage prepaid.

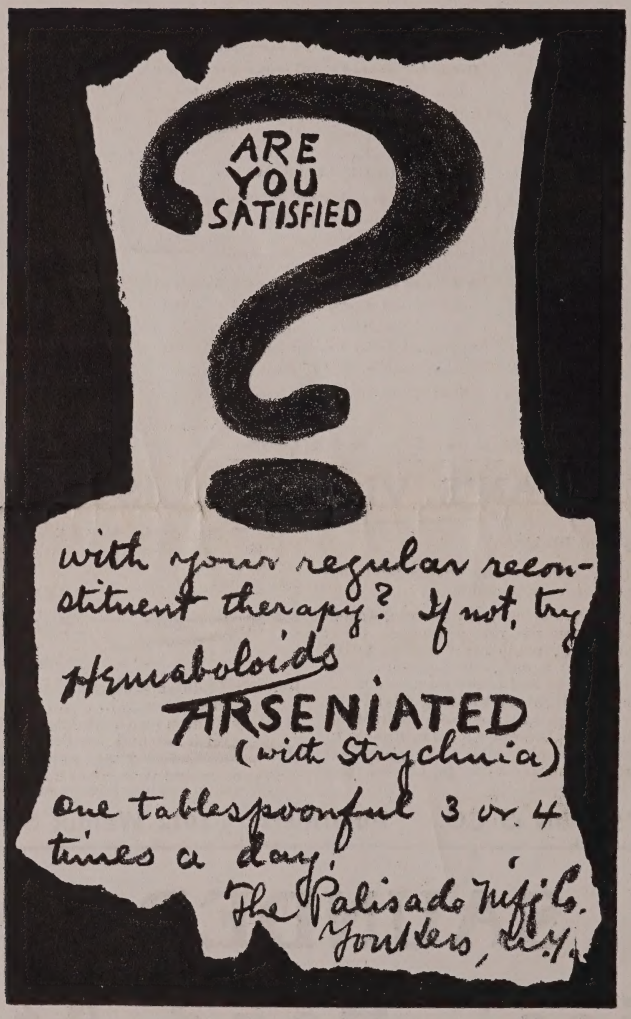
P. BLAKISTON'S SON & CO., Publishers, 1012 Walnut Street, Philadelphia

SAUNDERS'

Medical Hand-Atlases

(NEW VOLUMES HUMAN HISTOLOGY; MOUTH, PHARYNX, AND NOSE; ABDOMINAL HERNIAS; FRACTURES AND DISLOCATIONS JUST ISSUED)

SEE ADVERTISING PAGES 8 AND 9



WELLCOME INSTITUTE LIBRARY
Coll. welMOmec
Coll. pam
No. WG 200
1903
A 16 s

22500893959

WELLCOME LIBRARY INSTITUTE
303/50
Q war 02

ORIGINAL ARTICLES

SOME CARDIORESPIRATORY PHENOMENA REVEALED BY THE RÖNTGEN RAYS.

BY

ALBERT ABRAMS, A.M., M.D.,

of San Francisco, Cal.

In this contribution I intend to discuss certain facts which have been elaborated as the result of personal observation. The rays have been epoch-making in exploding many statements in physiology which have heretofore been regarded as apodictic. The diaphragm does not flatten with each inspiration; on the contrary, its curve is always maintained unaltered, and in its excursions it plunges piston-wise up and down. The lines of the diaphragm on both sides are not on the same niveau, and the excursions of the diaphragm are slightly greater on the left than on the right side. The heart is not stationary during the phases of respiration, but with each inspiration there is a decided downward movement of the organ following the inclined plane of the central tendon of the diaphragm. Physiologists have taught that the central tendon is capable of only limited movement in respiration, hence the heart in its respiratory mobility is likewise restricted. Campbell[1] asserts that when the pulsating heart is felt in the epigastrium after deep inspiration, it is not due to an actual descent of the heart but to the lifting upward of the thoracic cage over the heart. The aphorism of Fowler, "The position of the apex beat is the key to the diagnosis of nearly all the affections of the heart and chest" is no longer infallible. The rays prove that the socalled apex beat may be palpated at a point remote from the anatomic apex, hence the impulse felt may be due to the impact of the ventricle against the chest wall. Finlayson[2] and others taught that the disappearance of the apex beat, when the breath is held after a deep inspiration, is caused by a dilated right ventricle pushing the left aside. My observations show that this maneuver causes no dilation of the right ventricle nor dislocation of the left. The real explanation of the phenomenon is that the triangular space in front of the heart widens and lengthens in deep inspiration and causes a slight recession of the apex beat from the chest wall. We must frankly concede that the rays have not fulfilled our expectations in cardiac diagnosis and, beyond demonstrating the fallibility of our methods of percussion, they have only rendered us a modicum of service.

THE POSITION OF THE HEART.

The site of the heart is normally influenced by attitude, respiration and the position of the diaphragm. Adhesions modify the amplitude and direction of physiologic dislocation.

Attitude.—In attitudinal dislocation my measurements show that in the left lateral posture the heart moves on an average 2.6 cm. to the left and 1.1 cm. upward; in the right lateral posture 1.5 cm. to the right and 0.5 cm. upward. In children suspended by the feet I found only slight heart dislocation which was toward the median line. As a rule attitudinal dislocation was less evident in children than in adults, and less marked in obese individuals than in lean ones. In the recumbent posture the triangular space behind the heart is still in evidence, a fact which would tend to disprove the theory of Kingscote[3] that the predominance of asthmatic seizures at night was caused by this posture which enabled a dilated heart to impinge on the vagi.

Respiration.—The heart descends during inspiration and ascends during expiration. During inspiration the silhouette of the heart becomes more defined, its transverse diameter diminishes and the heart inclines slightly toward the right. I have observed that repeated deep inspirations will eventually darken the luminous area of the lungs and concurrently cause obscuration of the heart. This is probably dependent on the fact that repeated inspirations excite the respiratory center to send out expiratory impulses, thus putting the lungs in the position of expiration. During inspiration the cardiac pulsations show less amplitude than in expiration, a fact which may be referred to the stretching of the pericardium during inspiration. There is no reason to believe that an x-ray study of the heart pulsations supersedes in value the conventional physical signs, unless it is in the differential diagnosis between an enlarged heart and a pericardial effusion. In the former the pulsations may be discerned, but not in pericardial effusion.

Aneurysm.—As the pericardium is reflected on to the greater vessels at the cardiac base, there is during forced inspiration considerable stretching of these vessels; hence the area of an aneurysmal shadow would be diminished in inspiration and increased in expiration. Cardiac position is maintained by pulmonary suction. If this suction is diminished on one side, the heart will be drawn to the opposite side by predominant suction. This physiologic fact refers in a measure to the great bloodvessels and may be employed in a skiascopic study of suspected aneurysm. Diagnosis is based on such a multitude of little things that anything, however insignificant, is worthy of regard. In my initial investigations with the rays I frequently committed the error of making a diagnosis of aneurysm when it did not exist. Such errors, in the main, emanated from a failure to recognize the occasional anomalous course of the aortic arch. Even now I would hesitate to diagnose aneurysm with no other aid than the rays. Sagittal chest illumination shows a dense shadow caused by the sternum and spine; projecting from this shadow is a smaller round one, with a slight convexity outward, located in the second left interspace which belongs to the arch and descending aorta. Now, this small shadow may be brought into greater prominence either on the anterior or posterior chest surface by firm pressure sufficient to immobilize the right thorax. Such compression brings into play the unopposed suction of the left lung which tugs on the heart and bloodvessels, drawing them toward that side. I find that by oblique illumination of the chest, *i. e.*, by directing the rays from the posterior left side to the anterior right side of chest, the aortic arch may be brought out most distinctly. By this maneuver the heart silhouette appears suspended in space with a dark pulsating cord (ascending arch and descending aorta) rising from it. Two maneuvers in respiration are available in diagnosis, viz., Valsalva's and Müller's experiments. The former consists in conducting forced expiration with closed mouth and nostrils, which so raises intrapulmonary pressure that the great bloodvessels and heart are firmly compressed. The effect of

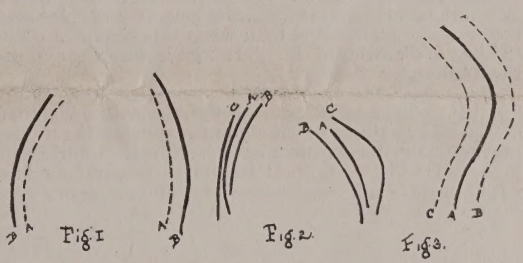


Fig. 1.—Shows effect on heart after the Valsalva experiment: A, heart area after, and B, heart area before the experiment.
Fig. 2.—Area of the heart as affected by respiration: A, area in quiet respiration; B, area after forced inspiration, and C, area after forced expiration.
Fig. 3.—Tracing from fluoroscope of an aneurysm: B, outline after Müller's, and C, outline after Valsalva's experiment.

such pressure on the heart may be seen in the accompanying fluoroscopic tracing. In Müller's experiment a vigorous inspiration is taken with mouth and nostrils completely closed. This maneuver diminishes the negative pressure on the heart and bloodvessels. If a shadow is a suspected thoracic aneurysm, the Valsalva experiment will diminish and the Müller experiment increase the area of the shadow.

POSITION OF THE DIAPHRAGM.

The area of cardiac dulness, as the rays show, is influenced by the position of the diaphragm; and per-

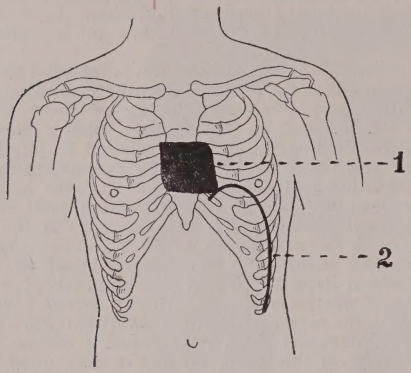


Fig. 4.*—Effect of stomach insufflation on the heart: 1, radioscopic appearance of the heart, and 2, outline of the fundus of the stomach

cussion, however skilful, often yields erroneous results. When the diaphragm is high, the long axis of the heart becomes more horizontal than when it is low, hence the transverse diameter of the heart is greater during expiration than inspiration.

Dislocation of Accommodation.—We have long recognized the almost intelligent function of muscles whether displayed in fixing a diseased joint or spine or in protecting an inflamed serous membrane. Now the midriff will become fixed in the deepest inspiration when if for any reason there is any encroachment on the respiratory area

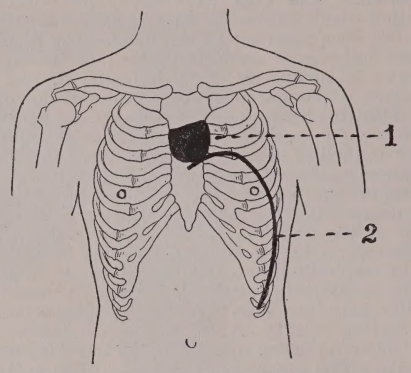


Fig. 5.*—1, radioscopic appearance of the heart after administration of a Seidlitz powder; 2, outline of the fundus of the stomach.

in the upper thorax. With this descent of the diaphragm there is also a downward luxation of the heart, which I will refer to as the dislocation of accommodation. In old age this form of dislocation is present, and the low position of the diaphragm and heart is a mere accommodation phenomenon to compensate for the increased

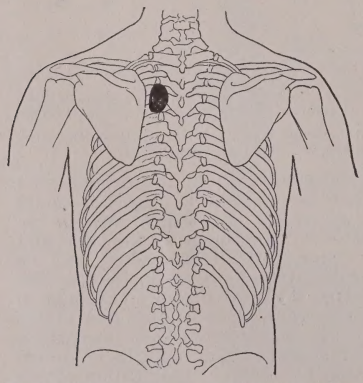


Fig. 6.*—Patch of dulness in dislocation of the heart upward. Patient in erect position.

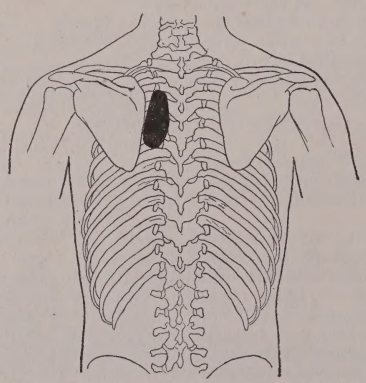


Fig. 7.*—Same case. Patient leaning backward.

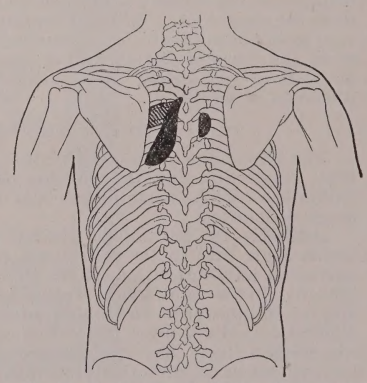


Fig. 8.*—Black areas, shadows cast by normal heart. Shaded area, shadow of dislocated heart.

* Figs. 4, 5, 6, 7, 8, 11 and 12 are reproduced from blocks received through the courtesy of the New York Medical Record.

length of the aorta. If we make firm compression of the upper thorax in a child we may note the immediate descent of the heart. Dislocation of accommodation is observed in thoracic aneurysm if unaccompanied by aortitis. Cardiac dislocation in thoracic aneurysm is usually regarded as a result of pressure, but the fact is, it occurs in early aneurysm before the heart is capable of mechanic dislocation. In health during deep inspiration there is usually a free space between the heart and diaphragm, and the heart does not rest on the latter but is supported by the bloodvessels. In aortitis and aneurysm associated with anginous signs, the diaphragm lies high, as if to support the heart and diminish traction on the bloodvessels. It is only a question as to whether pain or dyspnea predominates in disease of the heart and bloodvessels; if the former, the heart lies high, if the latter, it is low.

THE STOMACH AND COLON ON THE POSITION OF THE HEART.

I have referred elsewhere[4] to the influence of a dilated stomach on the position of the heart. The accompanying illustrations show how easily the heart may be dislocated by artificial distention of the stomach. It is unnecessary to descant on the practical value of this observation. Heart dislocation from stomach dilation is associated with a circumscribed area of dulness in the left interscapular region. Over this area bronchial respiration is heard. When the patient leans forward dulness and bronchial breathing disappear, to reappear when the erect attitude is resumed.

Leaning backward increases the area of dulness. The phenomena in question are produced by a dislocated heart compressing the lung, which fact is easily verified by the rays.

The foregoing syndrome may be reproduced synthetically by artificial distention of the stomach. An enormously distended heart may produce identical signs. Artificial insufflation of the colon is incapable of producing the same degree of cardiac luxation.

The Position of the Heart in Coughing and Laughter.—A cough, by alternately elevating and depressing the diaphragm slightly, does not materially influence the position of the heart, although in one patient the organ was forced upward nearly three inches. Laughter, on the contrary, by putting the diaphragm in the position of extreme expiration, causes a decided elevation of the heart. When laughter is paroxysmal the rays show the heart to bob up and down like a rubber ball, thus inducing a veritable heart massage. I can easily conceive the baneful effects of prolonged laughter in cardiac disease by inhibiting the return of the venous circulation and causing the disintegration of a thrombus in the heart chambers.

Amyl Nitrite.—The inhalation of this drug will intensify feeble cardiac murmurs, but ordinarily it is not serviceable in diagnosis, owing to the creation of cardiomuscular murmurs, which have no reality other than in the delirious state of the organ. To bring out aneurysmal pulsations while the rays traverse the chest, it is indispensable. During the inhalation of amyl nitrite, in a certain percentage of persons, the transverse diameter of the heart will become diminished. This drug is

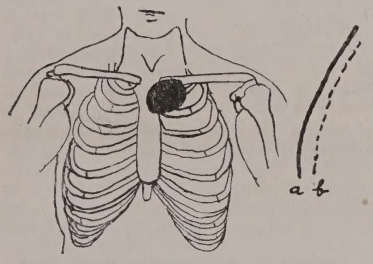


Fig. 9. Fig. 10.

Fig. 9.—Dull area elicited after amyl nitrite inhalation.
Fig. 10.—Action of amyl nitrite inhalation on the heart: A, area of heart before, and B, area after inhalation.

a specific in inhibiting the distress of angina pectoris, and if it reduces the cardiac area as the rays demonstrate, the theory of Heberden, that angina pectoris is a cramp of the heart muscle, must be wrong.

The theory of extreme tension of the ventricular walls in consequence of acute dilation seems to be corroborated by the action of the drug upon the heart. I have observed another phenomenon associated with the inhalation of amyl nitrite, and that is a limited patch of dulness which develops over the manubrium sterni, as seen in the illustration.

This patch of dulness may involve the entire manubrium and extend to the right as well as to the left side. The dulness in question is almost never reproduced after an immediate second inhalation of the drug. It is caused by a circumscribed collapse of lung. In some persons inhalation of the drug evokes dull areas in other chest regions, but the manubrium dulness is almost constant. The latter area of dulness may at once be dissipated by tapping the epigastrium, which provokes the counter lung reflex of dilation.

The Action of Rarefied and Compressed Air on the Heart.—I have sought to determine the modifying degrees of pressure of the external atmosphere on the heart by applying to the precardial region large cups from which the air was exhausted. It could easily be observed while the rays were traversing the chest that the creation of a vacuum caused a decided dilation of the right cardiac auricle and ventricle, and that the cardiac area was restored to normal the moment such vacuum was removed. Similarly, increased pressure in the precardial region caused a recession of the cardiac area, likewise implicating the right chambers of the

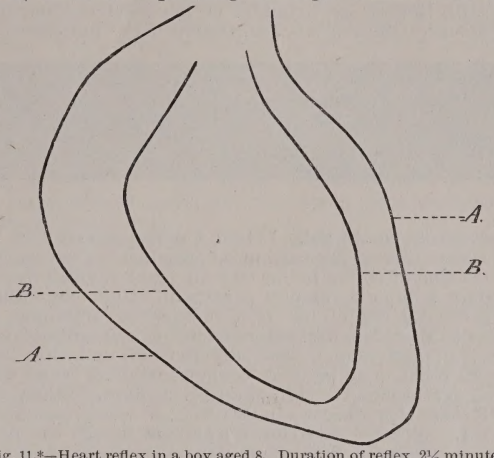


Fig. 11.*—Heart reflex in a boy aged 8. Duration of reflex, 2½ minutes.

heart, but the change in the cardiac area was not as great as in the previous experiment. These observations, elementary as they are, serve, nevertheless, as an index in determining the effects of altitude on the heart.

The Heart Reflex.—This phenomenon, first observed in 1896,[5] consists essentially of myocardial contraction resulting from cutaneous irritation in proximity to the precardium. It can only be observed with the rays. The degree of myocardial recession varies. In some it is scarcely perceptible.

In a previous contribution[6] I espoused the theory that the real factor involved in balneotherapeutics and mechanotherapeutics was not dependent on the baths and exercises as such, but to the cutaneous irritation provoked by these maneuvers and the resulting action

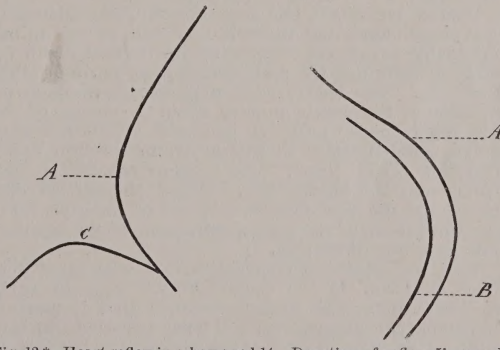


Fig. 12.*—Heart reflex in a boy aged 14. Duration of reflex, 55 seconds.

on the myocardium (heart reflex). Time has only strengthened me in this conviction. Since my original contributions on the heart reflex, I have studied it as an index to the condition of the myocardium, and find in brief that when the cardiac muscle is beyond restitution in myocarditis and valvular diseases the reflex cannot be elicited. Heretofore this reflex was only observed in the transverse cardiac diameter, but it may also be noted

in the sagittal diameter. The recognition of the heart reflex will often aid us in excluding the murmurs of a relative insufficiency. Here vigorous rubbing of the precardium will temporarily dispel the latter murmurs. One may elicit the heart reflex by irritation of more remote regions. I refer in particular to the nose. Some years ago [7] I directed attention to the pulmonary neurosis of dilation which could be evoked in almost every healthy person by irritation of the nasal mucosa, and that such irritation was inoperative if the mucosa were

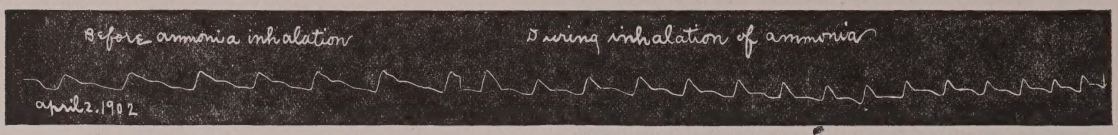


Fig. 13.

previously cocainized. Later [8] I demonstrated that in persons suffering from asthma of presumable nasal origin, impaction of cotton in one or both nasal cavities would induce a typic asthmatic paroxysm. One may easily observe by aid of the rays that when ammonia is inhaled there is a decided recession of the cardiac ventricles (heart reflex), especially the left, and that this heart reflex may be more pronounced than when discharged through the skin of the precardium. Ether and chloroform produce a similar though less pronounced effect. With the nose closed, a similar though less pronounced effect of the vapors may be obtained, presumably by their action on the pharyngeal and laryngeal mucosa. In a few instances the vapors produced a veritable heart inhibition. I could observe no diminution in the intensity of the heart tones during the inhalation of the vapors, yet the accompanying sphygmogram shows a decided difference in the output of blood into the general circulation before and after the inhalation of ammonia. These observations suggest the wise expedient of cocainizing the nasal mucosa before using an anesthetic, and further suggest the cogent necessity of anesthetizing the pharyngeal and laryngeal mucosa.

In another communication [9] I directed attention to inhibition of the heart as an aid in diagnosis. I then demonstrated the facility which certain persons possessed of inhibiting the action of the heart by voluntary contraction or stretching of the neck muscles.

During anesthesia, one may observe that this reflex act is accentuated, and there is no doubt, in my mind, that many a careless anesthetist has caused death by undue stretching of the neck during chloroform or ether anesthesia. The heart reflex may also be invoked by irritation of the gastric mucosa when the sponge of the gyromele is made to revolve against it. This fact may explain sudden death of gastric origin through reflex inhibition of the heart. The "vagus reflex" of May is practically the heart reflex. When the vagi are compressed and the heart observed by aid of the rays, there is an inhibition of the organ, retraction of the myocardium and lung distention.

The Lung Reflex of Contraction.—I wish finally to direct attention to the Cherchevsky [10] sign of early arteriosclerosis. This author contends that in normal conditions the diameter of the aorta varies at different times. It becomes dilated if the region over the arch is struck with the percussion hammer, while it shrinks in size if the blows are struck in the epigastrium. In arteriosclerosis it is impossible to produce these variations in diameter. The author has misinterpreted the phenomena obtained by his maneuver. What he really elicits is a circumscribed lung contraction adjacent to the part struck on the chest by the hammer and the blow on the epigastrium merely causes the collapsed lung area to dilate, thus supplanting dulness by resonance. The circumscribed dull area obtained by Cherchevsky corresponds precisely to that elicited by amyl nitrite inhalation. Dull areas may be obtained in other chest regions, especially in proximity to the sternum and spine if vigorous percussion is conducted. For this purpose, I use a large wooden mallet and a pleximeter of felt. The circumscribed dulness thus induced lasts but a few seconds but may be made to disappear at once by striking the epigastrium. Observed with the rays in a susceptible person, the phenomenon in question is a most interesting study. After the blow is struck the adjacent lung area becomes gradually dark, showing that the air has been expelled from the lungs, whereas in a few seconds the lung area becomes bright again. This reflex cannot be obtained if the nasal mucosa has been previously cocainized nor if the skin is irritated over the lung area, for then the counter reflex of lung dilation is elicited. The phenomenon just described I have called the lung reflex of contraction to distinguish it from a reflex described elsewhere [11] and which I will now specify as the lung reflex of dilation. The latter reflex is provoked by any cutaneous irritation, percussion of the epigastrium and the inhalation of irritating vapors. The lung reflex of contraction has the same value in diagnosis and therapeutics as the counter reflex, but I will reserve its consideration for a future contribution. Suffice it to say at this time that we must hypothesize two distinct functions of the vagus, one which will enable it to dilate and fibers which can contract the bronchioles. This is the only hypothesis which permits us to explain the lung reflexes. Aufrecht [12] has recently shown that the belief of only a circular layer constituting the musculature of the bronchi is wrong, and that by using the Biondi-Heidenhain stain a longitudinal muscular layer also exists. I contend, in

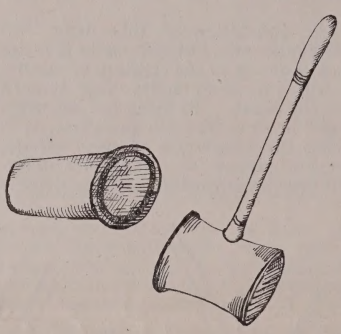


Fig. 14.—Mallet and pleximeter for eliciting the lung reflex of contraction.

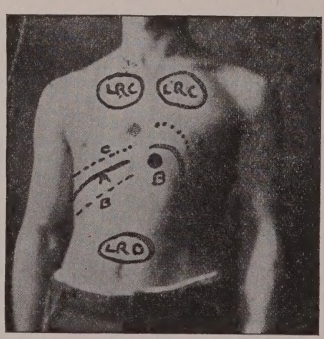


Fig. 15.—The lung reflexes of dilation and contraction: A, normal areas of heart and upper liver border respectively; LRD, region for eliciting lung reflex of dilation which, when struck, causes lung border to descend to B, and cover heart area almost to obliteration; LRC, regions for eliciting lung reflex of contraction which causes lung borders to recede to C.

view of this histologic fact, coupled with a knowledge of the lung reflexes and observations of asthmatics, that the theory of asthma must not alone be based on a spasm of the circular fibers of the bronchi but on an inability of the weaker longitudinal fibers to expel residual air imprisoned by the circular fibers. In support of this theory I recall my observations with amyl nitrite. The primary effect of inhalation of this drug is to augment lung volume and then to diminish it so that its efficiency in arresting paroxysms of asthma is actually dependent on contraction of the longitudinal no longer antagonized by the circular fibers. This action has its analog in the bladder musculature when, in consequence of a spasm of the sphincter vesicæ, the weak detrusor vesicæ cannot expel the urine, and ischuria spastica results.

BIBLIOGRAPHY.

[1] Campbell, Respiratory Exercises, p. 52.
[2] Finlayson, Clinical Diagnosis, p 453.
[3] Kingscote, Gaillard's Medical Journal, Jan., 1901.
[4] Abrams, Pacific Record of Medicine and Surgery, Sept. 15, 1898, and Medical Record, Sept. 8, 190 .
[5] Abrams, Medical Record, Mar. 26, 1898. and Jan. 5, 1901.
[6] Abrams, The Medical News, Jan. 7, 1899.
[7] Abrams, New York Medical Journal, June 13, 1896.
[8] Abrams, *American Medicine*, Mar. 1, 1902.
[9] Abrams, Philadelphia Medical Journal, Sept. 29, 1900.
[10] Cherchevsky, Journal American Medical Association, Dec. 14, 1901.
[11] Abrams, New York Medical Journal, June 13, 1900, and *American Medicine*, Mar. 1, 1902.
[12] Aufrecht, Deutsches Archiv f. klin. Med., Bd. lxvii, H. 5 and 6.

A CASE OF SUBACUTE COMBINED SCLEROSIS OF THE SPINAL CORD.

BY

CHAS. S. POTTS, M.D.,

of Philadelphia.

Instructor in Nervous Diseases at the University of Pennsylvania; Neurologist to the Philadelphia Hospital.

In 1887 Lichtheim[1] first described three cases of pernicious anemia, which, in addition to the usual symptoms of that disease, presented symptoms of affection of the spinal cord. From this time similar cases associated with pernicious anemia were described by others until in 1891 Putnam[2] described a number of cases presenting similar clinical nervous symptoms and pathologic changes which were not associated with pernicious anemia, but occurred in debilitated people past middle life, who, in most cases, had been subjected to some other form of toxemia, and in some of whom anemia occurred as a secondary symptom. Dana[3] very shortly afterward reported a similar case.

A considerable number of like cases most frequently occurring in women have since been reported by various observers, which either occurred in connection with pernicious anemia or other toxic and cachectic conditions, notably the acute infectious diseases, prolonged diarrhea, lead-poisoning and possibly shock, prolonged worry and poor nutrition. In the latter group anemia as a secondary symptom is also usually but not always present. To this group of cases somewhat differing names have been given by different observers, *e. g.*, subacute combined sclerosis of the spinal cord; subacute combined degeneration of the spinal cord (Russell, Batten, and Collier[4]); and diffuse degeneration of the spinal cord (Putnam[5]). The first symptoms are usually marked paresthesia, especially of the lower limbs, slight weakness of the lower limbs and some ataxia. As the disease progresses the legs become more spastic and the deep reflexes increased, after a varying period the paralysis changes from a spastic to a flaccid one and the deep reflexes disappear; finally the arms become affected, wasting of the muscles with changes in the electric reactions develop, and more or less complete sensory paralysis appears. In the later stages also incontinence of the sphincters, edema of the lower limbs, bed-sores and subcutaneous hemorrhages and slight dementia have been noted. An eruption of herpes sometimes occurs as an early symptom and remissions in the symptoms for a greater or less length of time are frequent. While the disease may be confounded with either neuritis or tabes dorsalis, it can be distinguished from the first by the absence of tenderness over the nerve trunks, and in the early stages the occurrence of a spastic condition of the legs, Babinski's reflex and the absence of muscular atrophy; from the second by the rapid onset, muscular weakness, presence of Babinski's reflex, absence of ocular symptoms and, if in the early stages, increased knee-jerks. The pathologic changes in the nervous system may be summarized as follows: A diffuse degeneration of the posterior and lateral tracts of the cord, chiefly in the dorsal and lower cervical regions, freedom from involvement of the gray matter and nerve roots, and varying, usually slight, degrees of degeneration of the spinal bloodvessels.

The prognosis is bad, death usually occurring in two or three years at the latest. The treatment is essentially tonic and supporting.

The following case, in which unfortunately an autopsy could not be obtained, is so typical clinically that it seems worthy of report:

Catherine K., aged 56, was admitted to the Philadelphia Hospital in June, 1901. She had previously been in the Woman's Hospital, and for her previous history here given I am indebted to Dr. F. P. Henry, under whose care she was. She was first admitted there in December, 1899. Nothing special is noted in her family or previous history until a year previous (December, 1898) to her admission to the hospital; at that time she had an attack of influenza. She apparently recovered from this but about a month afterward she began to experience a sensation of numbness and tingling in the hands. Two months later similar sensations appeared in the legs, which soon also "became stiff and she could not used them well." She remained in this state until her admission to the Woman's Hospital. It was then noted that she dragged one foot and raised the other unusually high. Her appetite was poor, vomiting occurred at times, and she was very weak.

Examination of the blood at this time showed red corpuscles, 1,239,060; white, not given; hemoglobin, 44%. About two weeks later it was as follows: Red, 1,257,584; white, 4,071; hemoglobin, 40%. After two months' treatment she was discharged improved, but returned in a week with a return of the symptoms. Examination of the blood then showed red corpuscles, 2,362,500; white corpuscles, 6,719; hemoglobin, 50%. She was again discharged in six weeks, her condition being much better, and she was not seen until the following October. Examination then showed her legs to be weaker, but she could walk alone; knee-jerks much increased; no ankle clonus; station good; sensation normal, and eyes normal. A systolic anemic murmur was heard at the apex. Her blood count was: Red, 1,464,000; white, 2,600; hemoglobin, 43%. It was also noted at this time that the "red cells were anemic, many being mere shells; five nucleated red cells were seen, and many large grayish cells with very pale-blue nuclei." On November 20 a herpetic eruption appeared upon the back and right side. On January 14, 1901, she was again discharged much improved, her blood count showing red cells, 2,000,000; white, 2,400; hemoglobin, 66%. It was also noted that the numbness of the feet was much lessened, but her gait was the same. The diagnosis made was pernicious anemia.

After leaving the Woman's Hospital she states that she got about fairly well, although her legs were "stiff," until April, when she fell while trying to walk; she then went to bed and there remained until her admission to the Philadelphia Hospital in June.

At this time the patient was pale, but appeared fairly well nourished. She complained of inability to walk, shooting pains in both legs in the course of the sciatic nerves, burning sensations in the feet, tingling sensations in the hands, and frontal headache.

Examination.—There was ability to slightly adduct the thighs and to flex and extend them upon the pelvis; there was also slight power of plantar flexion of the feet and of flexion and extension of the toes. As the patient lay in bed, both feet were markedly plantar flexed. All movements of the hands and arms could be performed, but they were much weaker than normal. The grip of the right hand measured 12, the left 19. All the muscles of the legs were atrophied, those of the right being more so. The muscles of the arms were flabby, and there was decided atrophy of the intrinsic muscles of the hands also more marked upon the right side. Owing to the electric appliances being out of order, electric examination of the muscles could not be made. There was no paralysis of any of the cranial nerves. The knee and Achilles jerks were absent. The plantar reflexes were very active, and a marked

Babinski phenomenon present upon both sides. All other reflexes, both superficial and deep, were absent. Fibrillary twitching of the muscles was not present.

The patient had incontinence of urine, due to retention. She said that she was conscious of a desire to urinate but was unable to perform the act. This trouble began a month before entering the hospital. The bowels were obstinately constipated.

Marked paresthesia of the limbs, as before mentioned, was complained of. There seemed to be slight hyperesthesia of the right thigh, and passive movements of the legs caused some pain. There was no tenderness of the nerve trunks. Hypesthesia was present in both legs below the knees; pain and temperature senses were lost in the same area. Over the thighs either heat or cold was felt as heat. Sensation upon the trunk and arms was normal. There was incoordination in the movements of the arms, the patient being unable to touch the end of the nose or bring the index fingers together either with the eyes closed or open. Passive movements of the fingers or toes were not recognized. She recognized a pencil held in the left hand, but could not recognize a coin or key held in either hand (astereognosis). The extremities were not cold or cyanosed. Over the first metatarsal-phalangeal joint of the left great toe there was an area of hyperemia about the size of a dime; on the heel was a similar area the size of a fifty-cent piece. On both legs were a number of small red spots which disappeared momentarily on pressure. Some edema was present about the ankle-joints. No disorder of any of the special senses was present. Her memory had failed markedly.

The urine was examined several times and with the exception of containing sugar was normal. Examination of the blood showed: Red, 2,275,000; white, 7,000. Hemoglobin was not estimated. Owing to circumstances beyond our control further examination of the blood was not made. Examination of other organs was negative. At the time of admission her temperature was 99° F., and pulse 80 to the minute.

The patient steadily grew worse. On July 17, 1901, it is noted that the feet were markedly edematous. Along the outer margin of the sole of the left foot there was a large area of hyperemia in about the center of which was a small patch of gangrenous skin. Similar areas were present over the left internal and the right external malleoli. On July 22 diarrhea and vomiting set in, which continued until her death on July 31. Three days before death her temperature, which had ranged from normal to 101°, rose to 103° and just before death was 106°. For several days previous to her death the patient lay upon her right side in a semistuporous condition with the thighs flexed upon the body and the legs flexed upon the thighs.

There would seem to be no question as to the proper diagnosis of this case. The paresthesia as an early symptom, slight ataxia, spastic paralysis, with increased reflexes and no sensory paralysis, becoming later transformed into a flaccid paralysis, and with the exception of the Babinski phenomenon, absent reflexes, ataxia, and sensory paralysis are very characteristic.

The question of etiology is of some interest. There has been some dispute as to whether these cases attendant upon pernicious anemia should be classified with those attendant upon other toxic and wasting conditions. Authorities in this country believe, what seems evidently to be the common sense view, that they should. It will be noticed that in the case just reported the woman was well until she had influenza, after which the symptoms of disordered nervous system very soon (one month) appeared. She was not seen at the Woman's Hospital, when the diagnosis of pernicious anemia was made, until one year afterward. That she had pernicious anemia at that time there can be no question, the diagnosis having been made by a distinguished hematologist. While we cannot be absolutely certain, it would seem probable from the history that the degeneration of the spinal cord was caused by the toxins of influenza, and that the pernicious anemia was caused also by the same poison. A somewhat similar case in a woman in whom pernicious anemia and the spinal symptoms appeared, after an attack of grip, is mentioned by Putnam,[6] to show that in the cases which follow pernicious anemia it is probably the same agent that produces the blood changes that causes the degeneration of the spinal cord. Billings[7] well sums up the whole matter when he says: "There is marked similarity of the contributing causes of pernicious anemia and of the conditions which are mentioned as causative in the production of the spinal cord lesions of other conditions. The consensus of opinion, as stated, is that pernicious anemia is due to a hemolytic toxin, and it is the universal belief, too, that the different conditions are due to a toxin. It is suggestive, therefore, that possibly a toxin which has its origin, perhaps, in the way suggested by Adami* may be one which may have, in certain individuals, a predilection for hemolysis; in another for degeneration and sclerosis of tissue which, by election, affects the liver in one case, the kidney in another, and certain parts of the spinal cord in another."

REFERENCES.

[1] Lichtheim, Verhandl. des VI Congresses f. innere Med., Wiesbaden, 1887; Neurologisches Centralblatt, 1887, vi, S. 235.
[2] Putnam, Jour. Nerv. and Ment Dis., 1891, 69.
[3] Dana, Jour. Nerv. and Ment. Dis., 1891, p. 205.
[4] Russell, Batten, and Collier, Brain, 1899, 39. In this paper a complete bibliography up till 1899 can be found.
[5] Putnam and Taylor, Jour. Nerv. and Ment. Dis., 1901, p. 1.
[6] Ibid, Jour. Nerv. and Ment. Dis., p. 21.
[7] Billings. Shattuck Lecture, Boston Med. and Surg. Jour., August 28, September 4, 1902.

THE ETIOLOGY OF UTERINE AND PELVIC DISEASE.[1]

BY

CLARENCE L. WHEATON, M.D.,

of Denver, Colo

Clinical Associate in Gynecology, Denver College of Medicine; formerly Clinical Assistant in Gynecology, Chicago Polyclinic, and Attending Physician Out-door Free Dispensary, St. Joseph's Hospital, Chicago, etc., etc.

With the progress of knowledge and the accumulation of facts relative to the etiology of disease, we are better able today than ever before to solve the intricate problems of pathology and bacteriology, advancing, as it were, more rational theories as to the cause of uterine and pelvic disease.

Any one who has had the opportunity of conducting a large charity clinic for the treatment of diseases peculiar to women must necessarily be impressed with the fact that pathologic conditions involving the uterus and adnexa are exceedingly common.

The quacks and nostrum mongers devote whole pages of the daily press to the exploitation of their wares for the treatment of uterine and ovarian diseases, and whether their remedies are efficacious or not, the ability of these various firms to meet their enormous advertising expenses proves the ready sale of the medicament.

The large attendance of suffering women at the gynecologic clinics of our free dispensaries, together with the vast number as already mentioned who seek relief for their ills at the hands of the vendor of patent medicines, enables us to form some adequate idea of the prevalence of diseases peculiar to women, involving the generative organs.

In the discussion of the etiology of uterine and pelvic disease, I shall draw my conclusions from observations made in private practice and at the charity clinics which I have had an opportunity of conducting.

The environment of the woman in America differs from that of her foreign sister in many countries of the old world. In Europe and other foreign countries women by thousands labor in the fields; in the various seaports of the Orient, ocean liners of enormous tonnage are coaled by women, and in the various tribes of Indians the female performs the drudgery incident to their mode of living. In the circus tent the woman, high aloft on the flying trapeze, twice daily performs acts requiring great physical strength, and her powers of endurance seem almost equal to the male. So we may reason that the female, if kept beyond influences physically depreciating in character may compete physically with the male of her race.

Is not the woman of modern society exposed to depreciating influences, particularly the woman of high social environment? Our ways and customs of civilized life have unquestionably depreciated her power of

*In the intestines.

[1] Read at the thirty-second annual convention of the Colorado State Medical Society.

of special pathologic interest, and will doubtless be reported. An abnormal communication between the enteric and urinary tracts was not discernible in my patient, and for a period of several months, while he remained in the hospital, repeated examinations of the urine failed to detect anything abnormal.

The second case is one of hematuria resulting from the development of an echinococcic cyst, whose products were eliminated through the urine. A bottle containing about four ounces of bloody urine was found among

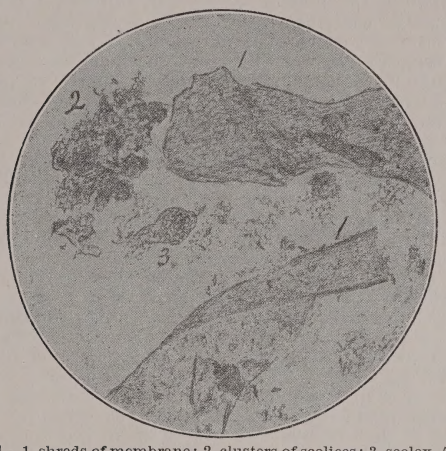


Fig. 4.—1, shreds of membrane; 2, clusters of scolices; 3, scolex, *Tænia echinococcus*. Obj.: Queen ⅔, eye piece iv.

a number of specimens in the clinical laboratory of the Philadelphia Hospital; it bore no label and all efforts to determine the specimen's origin were of no avail. The urine was bloodstained, and displayed a heavy sediment composed, for the most part, of shreds of flocculent membrane.

Microscopic study showed it to contain shreds of a yellowish membrane, hooklets (Fig. 4), and scolices of the *Tænia echinococcus* (Fig. 2). Many blood casts were also present (Fig. 3).

EXOPHTHALMIC GOITER: REPORT OF CASE.[1]

BY

K. S. HOWLETT, M.D.,

of Franklin, Tenn.

On June 21, 1901, G. H., white., male, unmarried, aged 34, applied to me for relief from "indigestion and torpid liver."

History.—He had run a wheat-thresher engine for a number of years and later an engine at a flouring mill; at both places the labor was heavy, the heat excessive and the hours long. His habits had always been good, and he had always boasted of his capacity to endure an almost unlimited amount of labor without fatigue or ill consequence, and from early life had been an excessively hard worker, allowing himself little rest and no recreation whatever. Four years ago he first noticed his strength and endurance were beginning to fail, and after a day of hard work he would feel considerable physical and mental depression, accompanied by pronounced muscular weakness and tremulousness. The following day he would feel indisposed or unable to resume his work. He also acknowledged some shortness of breath and spells of palpitation of the heart, which had increased in frequency and severity. During this period, however, he had not been confined to his bed for as much as an entire day, but had called on two or three physicians at various times for treatment and had been invariably told that he was suffering from biliousness and given calomel to correct it. His tongue, he stated, was usually dirty, and he had a bad taste and poor appetite with constant dull headache, somewhat throbbing in character. His digestion had not been good for a long time, his stomach feeling full and uncomfortable after meals, and he had several spells of acute indigestion or colic (which he continued to have during the remainder of his illness). Constipation was the rule, though it had not been very obstinate and was occasionally alternated with diarrhea. These disturbances seemed to me to be part of, and not the cause of the patient's general condition, and could be readily accounted for by the mental worry, change of habits, lack of exercise, etc., and at the time I saw him they certainly were not the most prominent symptoms. Sometimes for days, or even weeks, he would feel fairly comfortable and be able to keep at his work almost constantly, still he had been growing steadily worse and was now compelled to abandon work entirely.

Examination.—The patient's general appearance was that of languor and fatigue, his countenance indicative of discouragement as well as distress. The skin of the face was dark, almost bronzed, the coloration being much more marked immediately around the eyes. The complexion was sallow and the mucous membrane of the lips, mouth and fauces was a pale, bluish color, suggestive of leukemia. I noticed the thyroid was enlarged, but the patient had not mentioned it, and in fact seemed rather irritated and disgusted that I should give it so much attention. He stated that he had first detected it when he was about 20 years of age (14 years ago) and that it had never been sore nor given him any pain or discomfort. The enlargement was on the right side, was flat and not very prominent and upon mere inspection did not appear to be larger than a turkey's egg. Upon palpation, however, it proved to be much larger, extending downward toward and behind the clavicle and backward toward the vertebras, and evidently exerting considerable pressure upon the trachea, bloodvessels, and nerves beneath. Breathing was labored, wheezing, and asthmatic in character, the respirations being 26. He had frequent, violent paroxysms of coughing, with scant expectoration of a thin, frothy, serous fluid. The pulse was 115 but increased to 130 after walking a few steps. It was quick, full, strong, forcible and regular. The cardiac impulse extended over a larger area than usual and was more perceptible; the epigastric pulsations were very distinct. The heart sounds were louder than normal but I could detect no murmur and the area of cardiac dulness was little, if at all, increased. I made no examination of the lungs at this time, and in view of subsequent developments this was unfortunate.

The patient seemed to be of fairly good weight, but stated that he had lost flesh decidedly during the preceding year. The muscles were large, apparently well developed like those of a laboring man, but were soft and flabby to the touch. Upon holding out the hand a fine tremor was very marked and presented an interesting and typical exhibition of the special symptom, said to be a constant and characteristic symptom of exophthalmic goiter.

The enlarged thyroid, tachycardia, and fine tremor, together with muscular weakness and general nervousness, induced me to make a diagnosis of exophthalmic goiter, notwithstanding the absence of exophthalmos, which if present at all was too slight to be of positive diagnostic value, and certainly would never have been noticed but for the other symptoms calling attention to it. Nor were there any other ocular symptoms at this time, although later Graefe's symptom (a tardy or defective descent of the upper lid when the eyeballs are directed downward) could occasionally be brought out. This, however, was not invariably present, and never well marked, although it did become more patent before his death.

I saw the patient on the street after this, and he said his cough had become more annoying, and he had some pain in his right side. On June 29, eight days after I had first seen him, and two days after meeting him on the street, I was called to see him at his home. He was complaining of a severe pain in the right side of the chest, which had been constant for three or four days, but had grown rapidly worse during the preceding night. It was acute, lancinating in character, and caused the patient to cry out in coughing. Examination showed a completely hepatized right lung, there being scarcely any expansion of that side, no vesicular murmur over any portion of the lung, no rales, and only slight crepitus at the lower portion, evidently pleuritic. The temperature was 103°, pulse 120, full and bounding. The cough was paroxysmal and violent in spite of every effort upon the part of the patient to suppress it. The expectoration was thin, watery and frothy, and neither at this time nor subsequently was there anything resembling the characteristic sputum of acute pneumonia.

Dr. D. B. Cliffe, Jr., of Franklin, Tenn., saw the patient with me in the afternoon of this day, and we were both impressed with the absence of so many of the general symptoms which would be expected from a severe pneumonic infection. There was no delirium, no general prostration more than had appeared on his visit to my office, and the condition of appetite and tongue were also about the same. There was an absence of the distressing dyspnea and cyanosis which would be expected when an entire lung had become hepatized. Physical examination of the heart and left lung rather indicated that the condition of the right lung must have existed long enough for nature to compensate to some extent for the loss of breathing space by increased power of the left lung. In fact, but for the temperature of 105°, the pain in the side and physical evidences of a solidified lung, there was no symptom present that could not be readily accounted for by my previous diagnosis. The pneumonia, if indeed it was a specific pneumonia as we at first thought, certainly did not run a typical

[1] Read before the Middle Tennessee Medical Society at Lewisburg, May 16, 1902.

course. The temperature was normal the next morning, and afterward ran an irregular course, usually going above normal at some time during the day, but at no time reaching 100° until the last two weeks of his illness, when it reached 101° and 102° a few times.

The lung never cleared up, although the patient lived two months longer. There was never during life any evidence of breaking down of lung tissue, nor of septic absorption. The autopsy showed a completely solidified lung, swollen, edematous, and filled with a whitish, semisolid exudate with pleuritic adhesions over the greater part of its area, but no abscess and no pus could be found.

In the beginning there was a moderate amount of pleuritic effusion, which disappeared within three or four weeks. The pain in the side disappeared in a day or two, and never returned.

From this time the patient's decline in general health, while slow and irregular, was sure. The thyroid did not perceptibly increase in size but the breathing remained much obstructed and grew more rapid. The expectoration became more profuse but retained its thin serous character. The pulse grew more and more rapid, reaching 180 or even more, sometimes becoming difficult to count, but it maintained its full, forcible beat even to the last. At times a heart-murmur could be distinctly heard at the apex, this was probably systolic but was not constant and we could not satisfactorily classify it. Rather distressing palpitation would nearly always occur when the patient attempted to assume the upright position and at such times he would complain of dizziness. The heart's action was regular until about 12 or 14 hours before death, when his condition grew suddenly worse.

The tremor remained about the same throughout; emaciation was rapid, and the muscular weakness became constantly more pronounced, the patient soon becoming unable to stand or walk; he received several falls in attempting to get up to stool. When lying down, however, he could move the limbs readily and freely and there were no evidences of paralysis. He complained considerably of bodily heat although the skin did not feel hot to the touch, being always moist and presenting a greasy appearance. Although the sweat glands were quite active all the time there were never any exhaustive colliquative sweats. At times there was considerable edema of the hands, face and trunk, but never of the lower limbs. In the earlier stages this would disappear under a little saline purging, but toward the last it became a more permanent feature.

The urine was amply sufficient in quantity, specific gravity 1,010 to 1,020, and sometimes contained traces of albumin. While the patient never grew hungry, yet he did take plenty of nourishment throughout his illness, and the digestive process was, as a rule, good. A little indiscretion in eating, however, would cause his stomach to distend with gas, and he would have acute indigestion and colic. He usually had to take medicine or an enema to get a movement from the bowels, though two or three times he had rather an alarming diarrhea, dysenteric in character.

The change in the patient's disposition was so decided as to amount almost to mental aberration. Before his illness he was said to have been a quiet, agreeable, even-tempered man of rather stolid, impassive temperament. He was now morose, irritable, impatient of contradiction, angry upon the slightest provocation, and suspicious. He would seem to be aware of this himself, and would apologize for it and make heroic efforts at better self-control. He frequently had a peculiar form of delirium, or more properly, mental delusion. He would imagine that he was at some other place than his home, that his mother was some other person, and he would maintain this idea with considerable warmth and stubbornness. Later he would seem to realize that he had been deluded, would speak of his mental confusion and seem much worried and depressed. He was sometimes hysterical, and toward the last showed symptoms almost maniacal in their manifestations. These mental disturbances were always transient and temporary, the patient being most always entirely rational.

Death seemed due to general weakness and heart failure. Twelve or 14 hours before this occurred, the pulse became very irregular, losing one or more beats at frequent intervals. The heart, however, still maintained its forcible, tumultuous action, as if laboring under undue stimulation.

Autopsy.—This was held a few hours after death. The thyroid was found much larger than had been suspected during life, the greater part of the enlargement being backward. It was larger at its upper portion than a man's closed fist, sending a projection downward behind the clavicle into the chest cavity. The pressure upon the trachea had been such that the rings were all softened, and it appeared as a collapsed tube throughout its entire length. The gland was very firm, hard, and appeared to contain (we did not use a microscope) an excess of fibrous tissue. Its cut surface was paler in color, and there was less exudation of colloid material than in health, and macroscopically there appeared to be an increased vascularity of the gland. No other pathologic condition except that of the right lung already mentioned was evident. The left lung was emphysematous and increased in size, but we could find nothing else wrong with it. The heart was probably slightly enlarged, dilated, but showed no valvular lesions. The liver, kidneys and spleen were of proper size and normal in appearance.

The tumor differed from that generally found in exophthalmic goiter, which is considered to be largely a vascular enlargement due to increased vascularity as well as to a general increase in the amount of secreting gland tissue, and is therefore softer than the gland of ordinary goiter, the change being aptly compared to that which takes place in the mammary gland during lactation. Just what was the true cause and the real pathology of the condition found in the right lung, what part the diseased lung played in the symptoms presented by the patient during life, and how much it hastened or contributed toward his death, what would have been the course and duration had this complication been absent, were puzzling questions throughout the patient's illness, and still remained unsolved problems after the autopsy. It was unfortunate that an examination of the lungs was not made upon his first visit to my office. No information as to this feature could be obtained from the physicians who had seen him before, as they stated that they had made no examination of the patient other than merely to look at his tongue. However, I think there is little doubt but that the lung complications developed between the time that I saw him at my office and when I was first called to see him at his home, although the wellknown general symptoms always expected in the presence of a recently and completely hepatized lung were absent. I hardly think it was a genuine pneumonia due to an infection from the pneumococcus, for although the symptoms present on the first day of his confinement to bed were such as to induce us to make a diagnosis of acute pneumonia, yet the subsequent course of the case was certainly not typical of that disease. The condition of the lung and pleura at autopsy, together with the character of the exudate with which the air-vesicles and tubes were filled, clearly indicated that there had been congestion and inflammation, and yet it was most likely a passive congestion due possibly to some mechanical obstruction to the return flow of blood to the heart or to some other cause which could not be clearly demonstrated.

On the other hand, the case in its history, course, and duration did present a typical picture of exophthalmic goiter except for the absence of exophthalmos. We are told, however, that while this is the most conspicuous characteristic of this disease, yet it is the one most frequently absent. At the same time, barring the local evidences of a solidified lung, there was no symptom presented by this case throughout its course that could not readily be accounted for upon the theory of thyroid intoxication alone.

Site Selected for Philadelphia Almshouse and Insane Hospital.—The Philadelphia councils have been asked to pass an ordinance permitting the Department of Charities and Correction to use part of the House of Correction property in Holmesburg as a site on which to locate the City Almshouse and the Department for the Insane. The selection of this site was based on the favorable decision reached by the party of physicians, representing a number of hospitals and three colleges, after they had made a thorough inspection of the location. Councils are urged to provide for the immediate construction of the necessary buildings. By a recent provision there is $250,000 available for the buildings and for a Municipal Hospital, and in addition there is a loan item of $200,000 which can also be used. It is proposed to spend $200,000 for the Insane Department and $100,000 for the Almshouse. The site selected consists of 150 acres of healthy, high, and accessible ground, which is already owned by the city. Part of the tract consists of 40 acres of woodland, which will be used as a recreation park. The Pennsylvania Railroad runs through the northern section of the land, and patients from all parts of the city can readily be transported over this railroad and transferred to the institution without the slightest inconvenience. It is estimated that the buildings when completed will accommodate 4,000 persons. Mayor Ashbridge, in a message to councils, recommends that the new buildings be designated as the Philadelphia Hospital for the Insane and Philadelphia Hospital for Indigent, and the whole institution to be known as the Philadelphia General Hospital. The county hospital will be retained on the present site at Thirty-fourth and South streets, where all the buildings are now located.

SPECIAL ARTICLES

THE GYNECOLOGIC EXAMINATION.[1]

BY

JAMES HAWLEY BURTENSHAW, M.D.,

of New York.

Adjunct Professor of Gynecology at the New York Polyclinic.

General Observations.—When a woman submits to a gynecologic examination, it must be remembered that she does so, in a majority of instances, with a full realization of what it implies, and with the hope that treatment will cure or relieve her condition. While the examination should be thorough in every sense, a conscientious effort should be made by the physician to respect her natural sense of modesty, and to spare her undue exposure. When possible, a specially trained nurse or other female attendant should prepare the patient, and should be present during the examination. Whether one is in attendance or not, the patient should always be allowed to arrange her clothing, before and after the examination, behind a screen, which preferably should be placed about or immediately adjoining the examining table.

The use of a sheet should never be omitted, and it should be scrupulously clean. All instruments to be used during the examination should be kept out of sight, and all unnecessary noise in handling them carefully avoided. Subsequent to the examination the instruments, towels, soiled cotton, and the like should be removed from sight before the patient is allowed to rise from the table. While it undoubtedly is a wise precaution to disinfect all instruments carefully, preferably by boiling, both before and after an examination, few gynecologists, in their routine office practice, attach to this procedure the importance it warrants. In every case they should be scrubbed clean with hot water and soap, and thoroughly dried before again being used or put away.

If the physician has the slightest reason to suspect the presence of recent venereal infection in the case of the patient to be examined, a thin, seamless rubber glove should always be used on the hand which examines the vagina, and the glove and all towels, instruments, etc., should be submitted to rigorous disinfection before being put aside. Rubber finger-cots under these conditions do not afford sufficient protection. In the case of malignant disease of the vagina or uterus, similar precautions are necessary.

The instruments used should be kept in warm water until required. Cold instruments should never be introduced into the vagina. If the instruments have just been boiled, the water in the basin need not be medicated, but otherwise it is best to add one of the mild antiseptics, such as creolin or lysol in the proportion of a dram to the pint. Mercuric chlorid will corrode the instruments and should never be used. Iodin, silver nitrate, or strong acids used in the course of local treatment ruin all fabrics with which they come in contact, and therefore all excess of these agents should be removed from the genitalia or from instruments with moistened absorbent cotton, rather than with a towel.

The time of election for the gynecologic examination is about midway between two menstrual periods. When possible, the patient should always have had a free bowel movement an hour or two previous to the examination, and to this end a saline cathartic should be taken the night before. Her bladder should be empty, or as near so as possible. If the examination is to take place under general anesthesia, she should have abstained from taking food for at least six hours previously. If apprehension is shown by a patient during the progress of the examination, a few words by the physician will often serve to distract her thoughts and render it less of a bugbear. Above all things the physician should never in any way express surprise, anxiety or consternation as a result of his findings. If the patient's condition is serious, it is probable that she will possess some understanding of its gravity, or of its consequences, and her mental state should not be made worse by any remark or facial expression of the physician. Finally, it is to be remembered that levity or joking conversation on the part of the examiner at such a time is distinctly out of place.

The Vaginal Examination.—The routine practice which I have adopted in vaginal and combined vaginoabdominal examinations differs somewhat in detail from that of many gynecologists, and therefore I shall describe it with considerable minuteness.

Whether the digital examination of the pelvic contents is made with one or two fingers, or with the fingers of the right or left hand, is a matter entirely of preference or custom with the examiner. Every gynecologist should be able to examine equally well with each hand, but while the right side of the pelvis may be most readily explored with the right hand and the left side with the left hand, long experience usually enables one to obtain all necessary information with the fingers of that hand which he is most accustomed to use. Personally I use the index and second fingers of the left hand, the remaining two fingers being doubled into the palm, the thumb being fully extended. The right hand is thus left free for the handling of instruments.

The patient having loosened her corset and all waistbands, she is made to stand on a small stool at the foot of the examining table, facing the examiner. The latter, or the nurse, then holds a sheet folded in half before her at a level with her hips, and protected by the sheet she is told to raise her skirts behind to the level of the table and then to seat herself on the edge of the latter. The sheet is then laid over her lap and she is assisted to lie down, a hard pillow of moderate height being placed under her head. Still protected by the sheet, the examiner then adjusts her feet in the stirrups and she is directed to separate her knees widely. If she has slipped back on the table, she is drawn forward so that her buttocks extend slightly over the edge. The lower part of the sheet is then folded under the edge of her skirts, and after being pushed upward some distance the nurse folds skirts and sheet inward toward the abdomen, holding them in this position during the examination. By this method the patient is least exposed. If preferred by the examiner, however, or if a nurse is not in attendance, the skirts and sheet may be raised to the level of the knees or the skirts may be pushed above the knees, care being taken that the sheet covers the latter at all times. If for any reason the course of the examination is temporarily interrupted, the end of the sheet should at once be dropped, concealing the genitals from view. When the patient is in proper position she is directed to rest her arms quietly at her sides and to breathe regularly and deeply, preferably with the mouth open, in order to relax the abdominal muscles as much as possible. She should not be allowed to raise her head from the pillow until the examination is concluded.

The physician then proceeds to inspect the external genitals, standing somewhat to the left of the patient and separating the labia with the thumb and forefinger of the right hand, or while seated before her, in this case using both forefingers for the purpose of exposing the canal. A careful visual examination should never be omitted under any circumstances; it requires but a moment, and much valuable information may be gained. A textbook on gynecology of comparatively recent date states in this connection: "Inspection of the external genitals should not be made a routine practice. As a general rule it should only be made when there is local tenderness, when syphilis or gonorrhea is suspected, or when it is said by the patient that something comes down at the vaginal orifice." Such teaching cannot be condemned too strongly. The physician owes it to his patient that the examination be as thorough and complete as lies in his power, and neglect of any advantage that may be gained by such a step will handicap him in his diagnosis and treatment. During the visual examination the physician should note the following:

1. The height and angle of the pubic arch, and the condition of the mons veneris. Scratch-marks on and in the neighborhood of the mons frequently are indicative of pruritus, or of the presence of pediculi. An extraordinary growth of hair in this region has been noted as sometimes occurring in connection with tumors of the pelvic organs.

2. The position and condition of the clitoris. Pronounced

[1] Lecture delivered at the New York Polyclinic Medical School and Hospital, November 26, 1902.

hypertrophy or congestion and sensitiveness of the clitoris, especially in a neurotic subject, should give rise to a suspicion of masturbation. An adherent prepuce may be a causative factor in many hysteroneurotic conditions.

3. The urethral orifice. Redness and sensitiveness is most frequently due to the presence of caruncle, to urethritis, or to prolapsed walls. Pus at the orifice may be due to general urethritis, or to inflammation of Skene's ducts.

4. Position and condition of the vulva. A virgin vulvar orifice is usually small, and its labia are firm; a multiparous orifice is more or less enlarged, and the labia are less firm, or flabby. A ruptured or absent hymen is not necessarily an evidence of unchastity. Every gynecologist of experience has seen cases in which the membrane has been torn or destroyed as a result of a fall, or by the use of an unyielding nozle while taking a vaginal douche.

5. The condition of the vulvovaginal glands.

6. The vaginal opening for presence of chancre, mucous patches, or condylomas; for prolapse (rectocele and cystocele); for laceration; for gonorrheal or leukorrheal discharge.

7. The anus for hemorrhoids, fissure, or fistula.

A curious fact which has very frequently been brought to my attention is the facility with which students at my clinics and in my operative classes diagnose the existence of a cystocele when none is present. This happens in the course of the visual examination, and in some instances, perhaps, is pardonable. The female urethra measures about 1⅜ inches in length, and is supported by the anterior wall and pubovesical ligament. The bladder, normally, then, is the distance mentioned from the vaginal orifice. Directly beneath the urethra, and especially at its junction with the bladder, the anterior vaginal wall is made up largely of erectile tissue. In women who lead an active sexual life this tissue is apt to become more or less hypertrophied, and I have frequently seen it enlarged to the size of a hickorynut. Under such conditions this socalled tubercle of the vagina is sometimes mistaken for a true cystocele, the examiner for a moment having become confused as to the anatomy of the parts.

The visual examination having been completed, the physician lightly anoints the finger or fingers with which he is to make the vaginal examination, and then with a towel wipes off the thumb by which the lubricant has been distributed, in order not to soil the patient's clothing. A very small amount of the lubricant will be necessary. The examiner's hands should be warm, scrupulously clean, and the nails should be cut short and rounded. A ring should not be worn on any of the fingers of the examining hand. The details of the digital examination demand close attention. The ability of the examiner to explore the pelvis without causing the patient unnecessary pain frequently determines whether he will be retained as her medical attendant. Aside from consideration for a woman's natural sense of modesty, no one feature appeals more strongly to her susceptibilities than absence of physical discomfort when undergoing an examination of this character. Three cardinal points should be borne in mind when introducing the examining fingers into the vagina: (1) Always pass the fingers into the canal from below—that is, over the perineal body—never from above; (2) always avoid touching the clitoris; (3) always avoid compressing the soft tissues under the pubic arch by making firm, steady pressure on the perineal body and rectovaginal septum. If the physician has been accustomed to examine with two fingers, and is confronted with the task of examining a nulliparous vagina of small caliber, it frequently is surprising how readily it may be accomplished without causing pain to the patient if these precautions are observed. On making firm downward pressure on the perineal body and avoiding as much as possible coming in contact with the pubic arch, I lay particular stress. At the introitus the vaginal canal is distensible to a very slight extent upward, due to its anchorage under the pubic arch, but to a marked degree downward, on account of the elasticity of the muscular walls and of the perineal body.

If the vaginal walls are relaxed, or the canal moderately capacious, firm pressure downward will not be so necessary, and the examining fingers may be introduced with a boring or worming motion; but if the orifice is small and the canal narrow much discomfort to the patient may be avoided if the fingers *creep* in, one after the other. The palmar surfaces of the fingers are always toward the perineum until the digits are well into the canal, when the hand is turned and the examination completed with it in that position. The manner in which it is turned is important. If the fingers are kept side by side and rotated together, if the orifice is small or the pubic arch narrow the index finger will impinge on the soft parts under the arch throughout the entire arc of the circle in spite of firm pressure downward being made at the same time, and considerable discomfort will result from the contact. A simple maneuver on the part of the examiner will almost completely obviate this difficulty. If the index finger is placed on top of the second finger before the rotation is made and kept in that position until the rotation is completed only a small portion of the soft parts under the arch will be compressed at any time.

The physician should invariably stand while conducting the digital examination. The labia are separated widely by the thumb and forefinger of one hand and are kept in this position until the examining fingers have been rotated. The tip of the second finger is introduced into the canal and firm, even pressure made on the perineal body. The end of the index finger follows, and likewise presses downward. Then the pressure made by the longer finger is relaxed and its tip is made to pass that of the index finger, and so on, pressure by each finger being made alternately until their second joints pass just beyond the introitus. Then the hand is rotated slowly, the two fingers being in the position described above, and the hand which has been separating the labia is placed on the abdomen in readiness for the bimanual examination.

As the fingers are passed along the vaginal canal toward the cervix the following points should be noted: The size and length of the canal; the presence or absence of rugæ; the amount of secretion present; the temperature (if raised); the sensitiveness; the state of the perineal body and vaginal floor —whether torn or relaxed; the presence or absence of fecal matter in the rectum. Small rectovaginal or vesicovaginal fistulas can usually be detected only on careful visual exploration of the canal, although if the induration surrounding such an opening is extensive it can ordinarily be detected by the fingers.

Examination of the Cervix: Position.—It has been very generally taught that the position the cervix occupies in relation to the long axis of the vagina is indicative of the position of the uterine fundus. This is distinctly incorrect. Normally, the long axes of the cervix and vagina form an angle slightly less than a right angle, the fundus uteri being forward. Three malpositions are possible in which the accepted teaching, as has just been said, can be shown to be incorrect: (1) The cervix uteri may be in its normal position, while the body may be bent forward, causing an acute flexion at the level of the internal os; (2) the body of the uterus may be in its normal position and the cervix be bent forward; (3) both cervix and body may be bent forward. In retrodeviation of the uterus, whether the case is one of flexion or version, the cervix is usually found more or less parallel with the vaginal canal. In lateral deviation the cervix may be drawn to one side by inflammatory contractions in the vagina or pelvic cavity, or pushed to one side by a pelvic tumor.

Size and Consistency.—A smooth, firm round cervix with circular ostium is usually indicative of nulliparity; a long, conical cervix with pinhole ostium generally denotes congenital sterility; a gaping ostium with more or less roughened or fissured edges denotes pluriparity. In pregnancy the cervix is enlarged and soft, due to congestion, but the same condition frequently prevails in acute metritis and acute cervicitis. In the latter case, it is accompanied by a more or less glairy discharge, often containing blood. A contracted, cartilaginous-like cervix may be indicative of a chronic or subacute inflammation which has progressed to the hyperplastic stage, or of the first stage of scirrhous degeneration. A cervix that is very much increased in size, that is of moderate hardness and more or less nodular, the enlargement extending to the body of the uterus, is nearly always cancerous, the disease being of the parenchymatous variety, while a cervix that is more or less immovable, and has a crater-like cavity with irregular edges, accompanied by a

foul-smelling, shreddy discharge, is in the ulcerative stage of the same disease. An epithelioma of the cervix is cauliflower-like in appearance, the organ is enlarged and soft, and it bleeds readily when touched.

Ulcers of the cervix are of rare occurrence, except when of syphilitic or tuberculous origin. The former are accompanied by pain, and yield readily to antisyphilitic treatment; the latter may easily be mistaken for the specific variety, or for carcinoma. Unless of considerable size, a specular examination is ordinarily necessary for their detection. Erosions of the cervix, on the other hand, are very common. The organ is enlarged, nodular, and usually soft, and when laceration is present, the lips are everted. When the inflammation is very marked, the condition may be mistaken for epithelioma. Small, nodular irregularities on the surface of the cervix are usually due to occlusion of the ducts of the muciparous glands, the socalled ovula nabothi.

Lacerations of the cervix, whether unilateral or bilateral, if of small extent, and especially if old, frequently are not recognizable to the sense of touch. A foreign body projecting from the cervical canal, or from one of the lips of the cervix, may be a mucous polyp or a pedunculated submucous fibroid or fibromyoma. The first are common, the second rare.

Conjoined or Bimanual Examination.—The examining fingers of the left hand having been brought in apposition with the cervix, the right hand should be laid flat on the abdomen, the roots of the fingers being just above the symphysis pubis. Firm pressure should be made with the fingers straight and close together and along their entire length, and the skin covering the abdomen should be pushed toward the navel. Then the fingers should be arched and their tips made to sink as deeply into the pelvis as possible, the pressure being firm and steady downward and toward the fingers in the vagina. Many gynecologists advocate arching the hand directly above the pubis and making the necessary pressure from that location. For many reasons this plan is not good, one being that frequently the bladder is not empty at the time of the examination, and pressure at this point, instead of facilitating the palpation of the uterus and adnexa, defeats the object by the bladder forcing the organs deeper in the pelvis. Pushing the loose skin upward with the flat of the hand before making deep pressure puts it less on the stretch when the fingers sink into the pelvis, and therefore gives less discomfort to the patient. To facilitate the examination of the pelvic organs, Winter [1] says:

It is very necessary to know what portions of the bony pelvis can be felt through the vagina. The posterior wall of the symphysis, the horizontal and descending ramus of the pubic bone, and the upper part of the ascending ramus of the ischium can be felt, whereas the tuberosity of the ischium can rarely be recognized, on account of the soft parts covering it. Of the descending ramus, the tuberosities can easily be made out, and are important in estimating the height of the portio vaginalis. The linea ileo-pectinea is easily recognizable in patients with relaxed vaginal walls, and under ether narcosis, as is the lower border of the sacrosciatic notch. The promontory and upper portion of the sacrum can be reached if the pelvis is not too wide, but the posterior and most excavated portions can seldom be felt. At times separate muscles can be felt in the pelvis, especially if in a state of contraction. On the anterior surface of the sacrum the pyriform muscle appears to the touch as a faint welt; on the anterior pelvic wall, on the obturator foramen, the expanded internal obturator muscle can be made out. The broad belly of the iliopsoas can be felt high in the canal from within upward and from below outward.

In palpating the contents of the pelvis one very important precaution should be borne in mind: to endeavor to transmit all impressions to be gained by the examination *from* the hand on the abdomen *to* the fingers in the vagina, and not *vice versa*. The reasons are obvious. The vaginal fingers are necessarily closer to the organs to be palpated and the intervening tissues are thinner and more sensitive than the abdominal wall. To accomplish this end, the fingers in the vagina should be held firmly and steadily against the area to be examined, and the pressure transmitted from the abdominal surface. To press downward from above and make a series of jabs with the fingers in the vagina, as I have frequently seen done, is not permissible under any circumstances. Aside from adding greatly to the discomfort of the patient, the results from traumatism might easily be serious, especially in the case of a thin-walled cyst or pyosalpinx.

The position of the hand on the abdomen, of course, will be changed as the examination progresses nearer the pubis and to each inguinal region, but the skin should always be pushed upward before deep pressure is made in each locality. A variety of movements by the hand will tend to facilitate the examination; thus, in addition to deep pressure, the muscles of the abdomen may be rolled under the fingers, or the abdominal surface sharply tapped, or successively pressed and released. At times a bimanual examination of the pelvis yields unsatisfactory results, owing to the rigidity of the abdominal walls, due either to the fact that pressure causes pain, or to nervousness on the part of the patient. If undue pain results from such an examination, the only recourse is complete anesthesia, but when nervousness and fear of being hurt is the cause of the rigidity, it frequently may be overcome by diverting the patient's attention to something not connected with the matter in hand. During the entire course of the examination she should be requested to breathe evenly and deeply, preferably with the mouth open.

Position of the Uterus.—Great diversity of opinion exists as to the normal position of the uterus. This is not surprising when it is remembered that the uterus is a movable organ, suspended in the pelvis by certain ligaments, and that it is susceptible of considerable variation within perfectly normal limits. The condition of the rectum, sigmoid and bladder, whether full or empty, one or all, naturally influences its position. For all practical purposes, the bladder being empty, it may be considered as being normally placed when, the woman being in the upright position, the plane of its long axis is slightly above that of the horizon, in other words, when it closely approaches the horizontal. Therefore, the patient being recumbent during the bimanual examination, the fundus, under these circumstances, will usually be found some two inches, more or less, back of the symphysis pubis.

The tips of the fingers in the vagina are placed directly under the cervix and steady pressure made by the hand on the abdomen. If the uterus is in its socalled normal position, and if the abdominal muscles are sufficiently relaxed, the organ can usually be brought between the fingers. If the uterus is not found in this position, the fingers in the vagina should be brought into the anterior fornix. If the organ is anterodisplaced, it will easily be outlined by the vaginal fingers through the walls of the bladder; if retrodisplaced, pressure should be made on the anterior portion of the cervix with the hope of raising the fundus so that it may be grasped. If this cannot be done, which is usually the case, the fingers in the vagina will recognize the condition when palpating the posterior culdesac.

Examination Through the Posterior Fornix.—The posterior vaginal fornix, normally, is about one inch in depth, and is concave in shape. It is separated from the Douglas culdesac by the reflection of the posterior vaginal wall covered by mucous membrane, by loose cellular tissue, and by peritoneum. The examining fingers, palmar side upward, are passed to the end of the fornix and firm pressure made by the hand on the abdomen. The culdesac ordinarily is empty. Abnormally it may contain one of the following: (1) Fundus of the uterus, the organ being retroflexed or retroverted; (2) a prolapsed ovary; (3) a uterine fibroid; (4) a prolapsed coil of intestine; (5) fecal impaction or a tumor in the rectum; (6) an hematocele, due to rupture of an extrauterine pregnancy; (7) ascitic fluid; (8) cellulitic or peritonitic exudate; (9) tumor of the sacrum.

The differential diagnosis in some cases is exceedingly difficult. The history of the case, with subjective symptoms, will frequently be of great assistance in determining the character of the tumor. In general the following characteristics will apply to the several conditions: A retrodisplaced uterus is of oblong shape, is soft, as a rule, elastic, and may be tender. The direct continuity of the cervix and uterine body may be traced. A fibroid growth is hard, and may be nodular. Unless bound down by adhesions, it is movable with the uterus. A prolapsed ovary is small, almond-shaped, and causes characteristic pain when compressed. An ovarian cyst is soft, presents a spherical outline, and is apt to be only slightly tender to the

[1] Gynäkologische Diagnostik, Leipsic, 1897.

touch. Prolapsed intestines, unless inflamed, are not sensitive, are compressible, and if not adherent may be made to leave the pouch by placing the patient in the knee-chest, and, at times, in the lateroabdominal or Sims position. Fecal impaction yields a doughy sensation, and cannot well be mistaken for anything else. A growth in the rectum will easily be diagnosed by rectal examination. An hematocele, the result of ruptured ectopic gestation, is soft, compressible, fills the entire pouch, and is painless to the touch. The history of possible pregnancy with sudden inguinal pain and collapse, along with other symptoms referable to the condition, makes the diagnosis comparatively easy. Ascitic fluid in the pouch is nonencapsulated, and its location will change with the patient's position. Cellulitic deposits may be found on one or both sides of Douglas' pouch, or through the lateral vaginal fornices, the result of inflammation in the laterouterine connective tissue between the folds of the broad ligament. In case this has gone on to suppuration, a smooth, convex tumor will be felt. If not of recent origin, it is apt to be hard, shrunken, and not tender; if recent, it usually will be soft, more or less boggy, and very sensitive. Enlarged lymphatic glands, presenting irregular flat surfaces, and which are tender to the touch, are frequently found in these localities.

Examination Through the Anterior Fornix.—The fingers in the vagina are now brought above the cervix, and steady pressure from the abdominal surface made with the other hand. The range of the examination here necessarily is limited. Abnormally, one of the following may be felt through the fornix: (1) An anteflexed or anteverted uterus; (2) a fibroid growth springing from the anterior uterine wall or fundus; (3) a pedunculated fibroid (rare); (4) a prolapsed coil of intestine (rare); (5) a prolapsed ovary (rare); (6) anteuterine hematocele (rare); (7) cellulitic exudate. A stone of large size in the bladder has been mistaken for the fundus of the uterus.

Palpation of the Tubes and Ovaries.—The fallopian tubes are given off from each side of the uterine fundus, are contained within the upper free border of the broad ligaments, and vary from four to six inches in length. In other words, they are soft, easily compressible, soft-walled tubes of small diameter extending sinuously from the uterus to the ovaries. They cannot be palpated through the vagina when normal except, perhaps, at their junction with the uterus; first, because it is practically impossible to differentiate them from the surrounding tissues; and second, because the narrowness of the vaginal canal limits the area that can be palpated. Normally the tubes are not sensitive to the touch. The ovarian ligaments are frequently mistaken for them when felt through the vagina.

The ovaries are almond-shaped bodies measuring about 1½ inches in length, ⅜ of an inch in width, and are about ¼ of an inch thick. Their size varies, depending on the ripening of the follicles and the development of the corpora lutea. They lie on the upper or posterior surface of the broad ligaments about 1½ inches from the uterus and beneath the tubes. Each ovary is attached at its lower end to the uterus by a ligament, the ovarian, measuring about 1½ inches in length, which is attached to the uterine fundus directly beneath the origin of the fallopian tube. According to Winter (*loc. cit.*), "the ovaries lie near the lateral walls of the true pelvis directly under the ileopectineal line. Their upper borders do not quite reach the iliac bloodvessels nor their lower borders the pelvic floor. Each is so suspended that its largest diameter is parallel with the long axis of the body, the hilus is directed forward, and the free convex border posteriorly, the flattened surface lying against the pelvic wall."

Palpation of normal ovaries should not be difficult in a majority of cases. If the vagina is small, or if the abdominal walls are rigid or contain much fat, skill and long practice, however, may prove unavailing in an effort to palpate them. The first requisite of success is an appreciation of the anatomy of the parts. My experience has shown me that almost invariably students and general practitioners search for them with the examining fingers placed *under* the cervix in the posterior vaginal fornix. No account is taken of their normal position, or of the resistance offered to the fingers by the laterouterine tissue or the uterosacral ligaments. Under these circumstances, of course, the effort will be fruitless, no matter what degree of pressure is exerted by the hand on the abdomen to force the organs deeper into the pelvis and so within reach of the fingers in the vagina. The ovaries, when normally situated, cannot be palpated through the posterior vaginal fornix. It must be remembered that the uterosacral ligaments pass from the posterior surface of the uterus, at the junction of the body and cervix, outward and backward to the second sacral vertebra. They thus form part of the upper lateral boundary of Douglas' culdesac, and upward or lateral mobility of the fingers in the posterior vaginal fornix necessarily is limited by their presence. An ovary prolapsed into Douglas' pouch may easily be felt, the intervening tissues being only the vaginal wall covered by mucous membrane, some loose cellular tissue, and the peritoneum.

If the ovaries are not prolapsed the examining fingers should be brought from the posterior fornix to the side of the cervix, and the examination continued through the lateral fornices. Here steady pressure should be made in succession, laterally, upward, and perhaps more or less downward, the hand on the abdomen pressing the pelvic contents toward the fingers. An ovary from this position cannot be so readily felt, for the reason that in addition to the vaginal wall a portion of the bladder and the broad ligament will be between it and the fingers in the vagina, but nearly always it will be recognized as a moderately hard body, uneven in outline, which causes marked pain on pressure. Frequently the ovaries may be more easily felt by combined rectoabdominal examination, a fact that should not be lost sight of in difficult cases.

THE WORLD'S LATEST LITERATURE

Journal of the American Medical Association.

December 27, 1902. [Vol. XXXIX, No. 26.]

1. Obstetrics and the General Practitioner. M. H. FUSSELL.
2. Three Cases of Involuntary Movements in Locomotor Ataxia. J. H. W. RHEIN.
3. Sanitary Measures for the Prevention of Tuberculosis in New York City and Their Results. HERMANN M. BIGGS.
4. A Peculiar Case of Recurrent Bullous Eruption. WILLIAM S. GOTTHEIL.

1.—Obstetrics and the General Practitioner.—Fussell emphasizes the obligation of the general practitioner who handles the vast majority of obstetric cases to follow hospital methods so as to make private work without avoidable mortality. Failure to periodically examine the urine is criminal neglect. Among other duties which he discusses are regulation of daily life, attention to the breasts, abdominal examination, measuring of the pelvis in the primipara, instructions to the woman as to preparation for the lying-in period. [H.M.]

2.—See *American Medicine*, Vol. III, No. 25, p. 1056.

3.—See *American Medicine*, Vol. III, No. 25, p. 1047.

4.—Recurrent Bullous Eruption.—Gottheil reports a case in which without either general or local prodromal symptoms there would appear minute vesicles, increasing to walnut size in two or three days if not ruptured. After rupture the epidermis could be removed at once, as epithelial repair had taken place under it. It recurred in the fall of four successive years. Benign pemphigus is the name that suits it best, but Gottheil hesitates to use this on account of its periodicity and the absence of inflammatory areola. [H.M.]

Boston Medical and Surgical Journal.

December 25, 1902. [Vol. CXLVII, No. 26.]

1. On the Teaching of Physical Diagnosis. WILLIAM SYDNEY THAYER.
2. Two Cases of Socalled Landry's Paralysis: Autopsies. E. W. TAYLOR and G. A. WATERMAN.
3. Obstetric Antisepsis. WARREN R. GILMAN.
4. Errors in the Estimation of Urea by the Hypobromite Method. ELLIOTT P. JOSLIN.

1.—The Teaching of Physical Diagnosis.—Thayer holds that the essential points in the teaching of physical diagnosis consist in the demonstration of these points in regional anatomy, an accurate knowledge of which is necessary to the diagnostician. Such demonstrations should first be had on the normal individual. It is desirable that the student should learn by actual observation and practice the physical causes for the

IF THERE
IS ANY REASON WHY

Cod Liver Oil should be used, there is every reason why the prescription should specify

FERROLEUM

because it is the **BEST** Emulsion known—physicians say so; because it is the **ONLY** Emulsion combining the pure Norwegian COD LIVER OIL with IRON and PHOSPHORUS, and because it is **EASY** to take and being largely predigested is readily assimilated by the weakest stomach.

Literature and sample free.
UNITED STATES FERROL CO., LTD., BUFFALO, N. Y.

Samples and Literature supplied by

BAYER
PHARMACEUTICAL PRODUCTS
40 Stone St. New York.
FARBENFABRIKEN vorm. FRIEDR. BAYER & CO. ELBERFELD

AGURIN The Non-Irritating Diuretic.

EPICARIN The Non-Toxic Dermal Parasiticide.

SALOQUININE The Tasteless and Improved Quinine.

HEDONAL The Promoter of Natural Sleep.

FERRO-SOMATOSE The Ferruginous Nutrient and Tonic.

PROTARGOL Antigonorrheal, Antiseptic.

ASPIRIN The Best Salicylate.

Emergency Food

Panopepton contains all the nutritive elements of beef and wheat in an absolutely non-coagulable form, and the organic and inorganic savory stimulant principles, all in their normal association and of standardised, high nutritive balance of proteins to carbohydrates.

Panopepton, therefore, possesses peculiar properties and advantages over any natural or other artificial food, and is so signally successful in serious straits that it is especially worthy of regard as an "emergency" food of wonderfully restorative properties.

A complete description of PANOPEPTON, its composition and the method by which it is prepared, will be sent gratis to any physician.

FAIRCHILD BROS. & FOSTER

NEW YORK

THE

POSITIVE NUTRIENT TO THE STARVED NERVE CENTERS IS

ARSENAURO.

THE GENUINE HAS OUR SEAL ON NECK - THE SUBSTITUTES HAVE NOT.

LOOK OUT. CHAS. ROOME PARMELE CO., 45 JOHN ST., N. Y.

Emergency Food

Panopepton contains all the nutritive elements of beef and wheat in an absolutely non-coagulable form, and the organic and inorganic savory stimulant principles, all in their normal association and of standardised, high nutritive balance of proteins to carbohydrates.

Panopepton, therefore, possesses peculiar properties and advantages over any natural or other artificial food, and is so signally successful in serious straits that it is especially worthy of regard as an "emergency" food of wonderfully restorative properties.

A complete description of PANOPEPTON, its composition and the method by which it is prepared, will be sent gratis to any physician.

FAIRCHILD BROS. & FOSTER

NEW YORK

THE

POSITIVE NUTRIENT
TO THE
STARVED NERVE CENTERS
IS
ARSENAURO.

THE GENUINE HAS OUR SEAL ON NECK - THE SUBSTITUTES HAVE NOT-
LOOK OUT.

CHAS. ROOME PARMELE CO., 45 JOHN ST., N. Y.